

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

Responsive to the rejection of claims 8 and 9 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 4,593,168 (Amada); the rejection of claim 8 under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,001,175 (Maruyama et al.); claim 8 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,226,383 (Bhat); and claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Bhat in view of U.S. Patent No. 4,979,466 (Nishitani et al.), U.S. Patent No. 5,174,825 (White, Jr. et al.), and U.S. Patent No. 5,273,588 (Foster et al), Applicants have amended claim 8 and submit that claims 8 and 9 are now in condition for allowance.

Claim 8 recites in part:

...said floating means including a plurality of floatation pores, a plurality of rotational pores, and a plurality of vibration suppression pores therein, said floatation pores, said rotational pores, and said suppression pores being positioned and directed so as to promote floatation, rotation, and vibration suppression, respectively, via air flow control...

Applicants submit that such an invention is neither taught, disclosed, nor suggested by any of the cited references alone or in combination.

Specifically, none of the cited references discloses or suggest three different pore sets, one each of these pore sets being positioned and directed so as to promote floatation, rotation, and vibration suppression, respectively. Therefore, the cited references, alone or in combination, fail to teach or suggest the invention as set forth in claims 8, as amended. For all the foregoing reasons, Applicants submit that claim 8, and claim 9 depending therefrom, are now in condition for allowance and hereby respectively request the withdrawal of the above cited rejections of claims 8 and/or 9.

Responsive to the rejection of claims 1-7 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative under 35 U.S.C. § 103(a) as being obvious over JP 59-215718 (Hiura) and under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,005,226 (Aschner et al.), Applicants have

amended claims 1 and 3-7 and have cancelled claim 2. Applicants submit that claims 1 and 3-7 are now in condition for allowance.

Claim 1 recites in part:

...wherein all pore types of said fine floating pores, said fine centering pores, said fine rotational pores, and said auxiliary fine suppression pores are provided on a surface of said floating unit and are inclined against the surface of said floating unit, an air flow being injected into said all pore types in a direction of the inclination.

Applicants submit that such an invention is neither taught, disclosed, nor suggested by Hiura, Aschner et al, or any of the other cited references, alone or in combination. Specifically, neither Hiura nor Aschner et al discloses a combination of fine floating pores, fine centering pores, fine rotational pores, and auxiliary fine suppression pores, all of which are inclined against a surface of the floating unit, as set forth in claim 1, as amended. For all the forgoing reasons, Applicants submit that claim 1, and claims 3-6 depending therefrom, are now in condition for allowance and hereby respectfully request the withdrawal of the rejections based upon Hiura and/or Aschner et al.

Claim 7 recites in part:


...said floating means including a plurality of floatation pores, a plurality of rotational pores, and a plurality of vibration suppression pores therein, said floatation pores, said rotational pores, and said suppression pores being positioned and directed so as to promote floatation, rotation, and vibration suppression, respectively, via air flow control...

Applicants submit that such an invention is neither taught, disclosed, nor suggested by Hiura, Aschner et al, or any of the other cited references, alone or in combination. Hiura discloses floating gas outlets 5, positioning gas outlets 4, and rotating gas outlet 6, but does not suggest the use of gas outlets that are specifically positioned and directed so as to promote vibration suppression. The various embodiments of Aschner et al disclose the use of gas flow channels (e.g., 320, 820) for delivery a flowing gas (e.g., 340) that both rotates and supports wafer 110. Aschner et al do not, however, disclose or suggest separate sets of flow channels that are positioned and directed so as to promote floatation, rotation, and vibration suppression, respectively. Therefore, each of Hiura and Aschner et al fails to teach or

suggest the invention as set forth in claim 7, as amended. For the forgoing reasons, Applicants submit that claim 7 is now in condition for allowance and hereby respectively request withdrawal of the rejections thereof based upon Hiura and Aschner et al.

5 If the Examiner has any questions or comments that would speed prosecution of this case, the Examiner is invited to call the undersigned at 260/485-6001.

Respectfully submitted,

  
Randall J. Knuth  
Registration No. 34,644

RJK/stel10

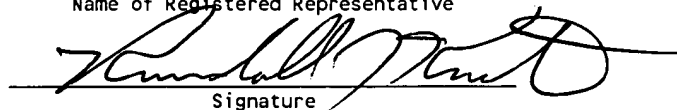
Encs: Replacement Claims  
Marked-up Claims  
Petition for Extension of  
Time  
Check No.6590 (\$110)  
Return Postcard

RANDALL J. KNUTH, P.C.  
3510-A Stellhorn Road  
Fort Wayne, IN 46815-4631  
Telephone: 260/485-6001  
Facsimile: 260/486-2794

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Hon. Commissioner of Patents and Trademarks, Washington, D.C. 20231, on: November 20, 2002.

Randall J. Knuth, Regis. No. 34,644  
Name of Registered Representative

  
Signature  
November 20, 2002  
Date



Marked-Up Claims

Please amend the claims as follows:

1. A substrate body-floating apparatus for blowing an air flow onto a rear surface of a disk-shaped substrate body to float and rotate the substrate body comprising:

a floating unit having a surface with a plurality of [one or  
5 more] fine floating pores for floating the substrate body, [one  
or more] a plurality of fine centering pores for centering the  
substrate body at a center of a substrate body-floating  
apparatus, a plurality of [one or more] fine rotational pores for  
rotating the substrate body at a center of said apparatus, and a  
10 plurality of [one or more] auxiliary fine suppression pores for  
suppressing vibration of the substrate body when the substrate  
body is rotated at a high speed, wherein [all pore types] of said  
fine [floating pores, said fine centering pores, said fine  
rotational] pores, and said auxiliary fine suppression] pores are  
15 provided on a surface of said floating unit and are inclined  
against the surface of said floating unit, an air flow being  
injected into said all pore types in a direction of the  
inclination.

Please delete claim 2 without prejudice.

3. The substrate body-floating apparatus according to claim  
[2] 1 wherein said plurality of [one or more] fine floating pores

RECEIVED

DEC 02 2002

TC 1700

for floating the substrate body crosses a rotation axis of the  
substrate body, [and] a surface of said floating unit being [is]  
5 divided into four <sup>N</sup>quadrants [areas] by an angular spacing [space]  
of 90 degrees, a plurality of [said one or more] said fine  
floating pores for floating being [are] provided in each  
quadrant, each said fine floating pore within one said quadrant  
having a same floating pore direction, said same floating pore  
10 direction being [one area that is] parallel to a diagonal line of  
said one said quadrant, said diagonal line being [each area and]  
oriented to a center of said floating unit.

4. The substrate body-floating apparatus according to claim  
1 [2] wherein said plurality of [one or more] fine centering  
pores for centering are located one of at positions on an outer  
periphery of the substrate body and [, or] on an outer side from  
5 the outer periphery at an angular spacing relative to one another  
[space], [and] said plurality of [one or more] fine centering  
pores for centering being directed toward [are oriented to] a  
center of said floating unit.

5. The substrate body-floating apparatus according to claim  
1 [2] wherein said plurality of [one or more] fine rotational  
pores for rotating are located at positions away from a  
tangential line to a circle with a radius smaller than the radius  
5 of the substrate body around a center of a surface of said  
floating unit, [and] said adjacent [one or more] fine rotational

pores for rotating [being directed away from one another] [are oriented] in [an] opposite tangential directions [direction].

6. The substrate body-floating apparatus according to claim 1 [2] where said plurality of [one or more] auxiliary fine suppression pores are [directed toward] [oriented to] a center of said floating unit and located on a periphery of a circle from the position of said plurality of [one or more] fine rotational pores for rotating from a center of said floating unit, adjacent said auxiliary fine suppression pores having [at] [an angular spacing] [space] of 90 degrees therebetween.

7. A substrate body-floating type of heater comprising:

a floating means for applying air to a rear surface of a substrate body to float, rotate and suppress vibration to the substrate body, said floating means including a plurality of floatation pores, a plurality of rotational pores, and a plurality of vibration suppression pores therein, said floatation pores, said rotational pores, and said suppression pores being positioned and directed so as to promote floatation, rotation, and vibration suppression, respectively, via air flow control; and

an optical lamp for heating a surface of the substrate body.

8. A substrate body-floating type of film-forming apparatus comprising:

a floating means for applying gas to a rear surface of a substrate body to float, rotate and suppress vibration to the

5     substrate body under atmospheric or under depressurized  
conditions for forming a film of deposited material on a surface  
of the substrate body, said floating means including a plurality  
10     of floatation pores, a plurality of rotational pores, and a  
       plurality of vibration suppression pores therein, said flotation  
       pores, said rotational pores, and said suppression pores being  
       positioned and directed so as to promote flotation, rotation, and  
       vibration suppression, respectively, via air flow control.